-safer boating since 1975

Engbo

Product catalogue

Engbo - innovative for more than 30 years

- Established in 1975.
- Started production of anchor winches mid-1980s, and the bow propellers by beginning of 1990s.
- The business is run today in modern manufacturing and office space outside Tønsberg.
- Self Development, Engbo Innovation AS working continuously on new products and further development of existing products.
- Delivers to most Norwegian boat manufacturers and to several major European boat builders.
- Leading the service and follow-up, both professional and private.

Engbo AS
Wish you a great boating season!

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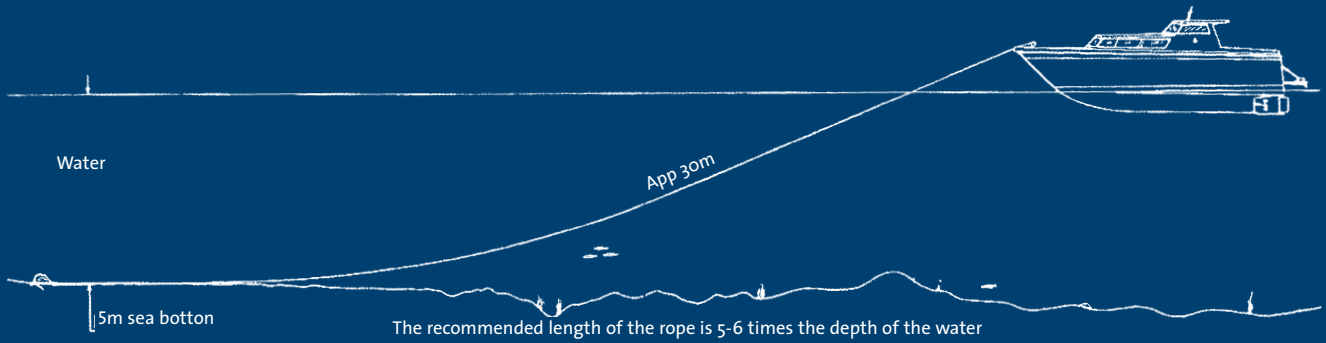

Water
App 30m
5m sea botton
The recommended length of the rope is 5-6 times the depth of the water

No boat is too small for an anchor windlass

Engbo has through many years been market leader on anchor windlasses. We can now offer solutions for smaller boats; Mini 101 for boats up till 20 feet and Midi 201 for boats up till 25 feet. The windlasses are smaller and lighter, and the prices are very favourable.
They have the same high quality as our other models, and are based on Engbo's knowledge and long experience. The windlasses are very compact and therefore easy to fit into the smaller boats.
A standard Mini/Midi "kit" consists of windlass with cables and a main switch, a transistor-based power electronics with integrated radio receiver, touch panel, braided leaded-rope, rope bushing, anchor bracket, fuse and fuse-holder. Remote control is option.

Engbo Mini 101

Small and compact anchor windlass for inside installation. Free-fall system. Gearhouse, gypsies and bracet in stainless steel. New and modern transistor-based power electronics with integrated radio receiver placed into a separate unit. The windlass can be operated on low speed by pushing and releasing the button several times as required.

Order no:	35-12135	Pulling power:	110 Kp
Operation:	Fixed touch panel or wireless remote control. Free-fall.	Pulling speed:	20m/min on 20 kilos load
		Recommended fuse:	100A
Motor:	12V, 350W		
Weight:	10 kilos		
Gypsy:	For rope		

The windlass is designed for inside installation on surfaces with different angles in relation to the stern. It can be fitted on the inside of the stern, hanging below the deck or aft of cross bulkheads inside the boat.

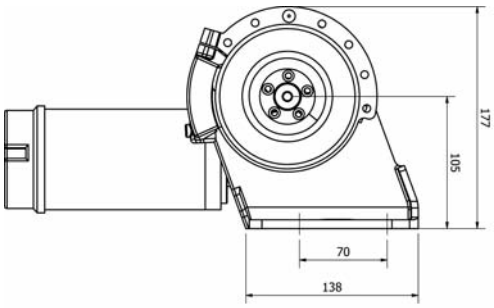
Engbo Midi 201

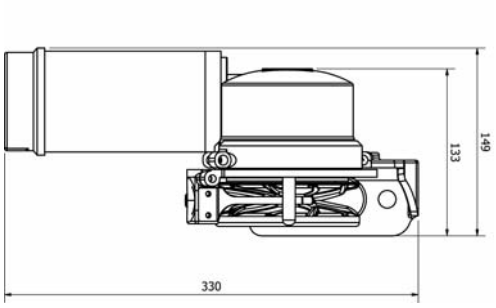
Small and compact anchor windlass for inside installation. Free-fall system and auto-stop. Gearhouse, gypsies and bracet in stainless steel. New and modern transistor-based power electronics with integrated radio receiver placed into a separate unit. The windlass can be operated on low speed by pushing and releasing the button several times as required.

Order no:	36-12106	Gypsy:	For rope
Operation:	Fixed touch panel or wireless remote control. Free-fall and auto-stop.	Pulling power:	230 Kp
		Pulling speed:	20m/min on 30 kilos load
Motor:	12V, 600W	Recommended fuse:	150A
Weight:	12 kilos		

The windlass is designed for inside installation on surfaces with different angles in relation to the stern. It can be fitted on the inside of the stern, hanging below the deck or aft of cross bulkheads inside the boat.

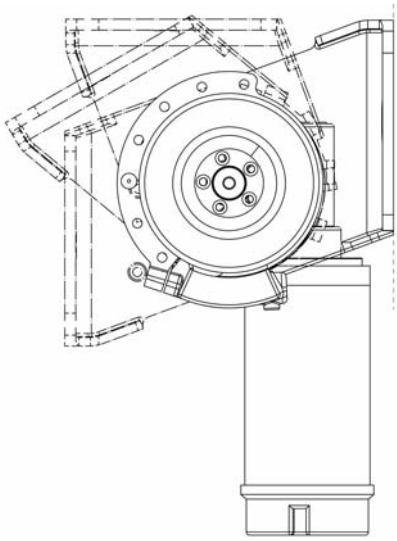
Measurements for Mini 101 and Midi 201





The mounting bracket

The mounting bracket allows for infinitely variable rotation to the windlass gear/motor and the bracket for the rope guide can also be rotated independently of the gear/motor and mounting bracket.



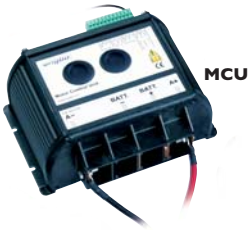
Engbo touch panel and remote control for Mini, Midi and Maxi

12-79000

12-47020

12-47021

12-47015


MCU

12-47008 / 12-47009

• Standard touch panel

Part no. 12-79000

- The windlasses are supplied as standard with 1 x watertight (IP 68) touch panel for installing in a readily accessible place in the cockpit.
- If only this touch panel is to be fitted, it must, for safety reasons, be positioned so as to allow the operator a clear view of the anchor as it is raised and seated in the anchor bracket.
- The panel comes with a self-adhesive surface, but if you prefer, it can be seated more firmly using the screws supplied.

• Wireless remote control

Part no. 12-47020

- The remote control is splash proof and features a modern, compact design with strips of "anti-slip material" on the rear surface. It will also float if dropped over board.
- Two-way narrow-band radio communication guarantees the transmission of an unique code to ensure that the signal controls only your windlass.
- An indicator light shows the voltage level or overload.
- Range of more than 30 m in normal conditions.
- Fits in standard mobile phone holders.
- The remote control uses three standard AAA (LR03) batteries – included. For normal operation, the batteries have a service life of more than two seasons.
- A wrist strap is supplied as standard. Normally, both sets of buttons are coded for the windlass supplied, but one set can be recoded if you would like to use the same remote control to operate two separate windlasses.

• Wireless remote control

Part no. 12-47014

- Floating, splash-proof, hand-held remote control unit.
- The wireless remote control can be used to operate maximum two thrusters and two windlasses, bow and stern.
- Activates both bow and stern thruster simultaneously in opposite directions by pushing the centre buttons.
- Operation range of 30 m under normal conditions.
- High quality, narrow band radio unit with two-way communication with the electronic control unit.
- Each unit has an unique code.
- Equipped with anti-slip strips on the back.
- Hand/neck cord is included as standard (easily removed).

The battery lifetime is more than 2 seasons based on normal leisure use.

• Remote control holder

Part no. 12-47030

Bracket included. Unique design; can also be used as key cover.

• Engbo Motor Control Unit – MCU

Ask for part numbers

Engbo MAXI windlasses are fitted with modern electronics that consist of:

- **Transistor-controlled power electronics** that replace the conventional cut-in relay. The new electronic unit contains no open contacts and is very flexible as regards voltage.
- The **control electronics** are software-based and feature an **integrated radio receiver** that communicates with the **wireless remote control**, and a built-in system to protect the windlass motor and electronic components. Other functions controlled electronically are two "up" speeds and two automatic stop indicators for seating the anchor.

• Separate electronic thruster control unit with integrated receiver

Part no. 12-47008

Special receiver for remote control, 12-47014, makes you able to control Engbo (XF) and QL (Volvo) bow thrusters.

• Separate electronic winch control unit with integrated receiver

Part no. 12-47009

Used for Engbo windlasses from approx. 1991 till 2006 if you want a new remote control.

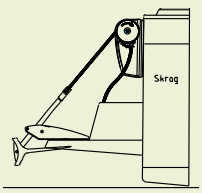
• Separate electronic control unit with integrated receiver

Part no. 12-47007

Winches and bow-thrusters of other brands can also be operated by Engbo remote control, part nos. 12-47020 and 12-47014. You will need 1 receiver unit for each device you want to connect to the remote control. Note! Please remember to state the brand of your winch or bow-thruster.

Engbo Maxi 31 for vertical outside/inside installation

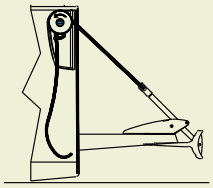
Operation:	Fixed switch panel or wireless remote control. Freefall, automatic stop on the rope version.
Motor:	12/24 V DC, 1000/1500W
Gypsy:	For rope or chain
Rope:	16 mm multiplaited, leaded rope
Chain:	8 mm DIN 766 or 6.5 mm Norwegian standard
Installation:	Supplied as a standard for vertical installation · Direct, outside on the upper stern On other vertical surface inside the boat · As a chain winch under the bow deck



NOTE: Rope/chain guide can be turned in steps to an angle of 90°, making it possible to install the windlass at an angle hanging up/down or horizontally

Engbo Maxi 40 for vertical outside/inside installation

Operation:	Fixed switch panel or wireless remote control. Freefall, automatic stop on the rope version.
Motor:	12/24 V DC, 1000/1500W
Gypsy:	For rope or chain
Rope:	16 mm multiplaited, leaded rope
Chain:	8 mm DIN 766 or 6.5 mm Norwegian standard
Installation:	Supplied for vertical installation as standard · Direct, inside on the upper stern or on any other suitable surface inside the boat



NOTE: Rope/chain guide can be turned in steps to an angle of 90°, making it possible to install the windlass at an angle hanging up/down or horizontally.

Engbo Maxi 32 for horizontal outside/inside installation

Operation:	Fixed switch panel or wireless remote control. Freefall, automatic stop on the rope version.
Motor:	12/24 V DC, 1000/1500W
Gypsy:	For rope
Rope:	16 mm multiplaited, leaded rope
Installation:	Supplied for horizontal installation as standard On the aft rope box · On the interior deck On the aft coveringboard · On the fore deck, as a bow winch or on other suitable surfaces in the boat

Engbo Maxi 32-C for outside/inside installation

Operation:	Fixed switch panel or wireless remote control. Automatic stop on the rope version.
Motor:	12/24 V DC, 1000/1500W
Gypsy:	For chain
Chain:	8 mm DIN 766 or 6.5 mm Norwegian standard
Installation:	Supplied for horizontal installation as standard On the aft rope box · On the interior deck On the aft coveringboard · On the fore deck, as a bow winch or on other suitable surfaces in the boat

Technical data · Engbo anchor windlasses

Model 31, 32 and 40 for rope or chain

Motor:	12/24 V DC, 1000/1500W
Weight:	Approx. 20 kg
Pulling power:	1000 W approx. 500 KP rope approx. 650 KP chain 1500 W approx. 850 KP rope approx. 1000 KP chain
Pulling speed:	Rope 20–25 m/min Chain 10–20 m/min

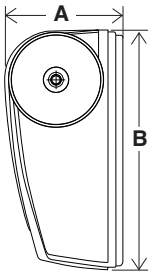
Usage time:	Max. 3 min. continuous operation
Recommended fuse 12V:	200 A/1000W, 300A/1500W
Recommended fuse 24V:	200 A/1500W
Recommended battery capacity 12V:	min. 100 Ah
Recommended battery capacity 24V:	min. 60 Ah

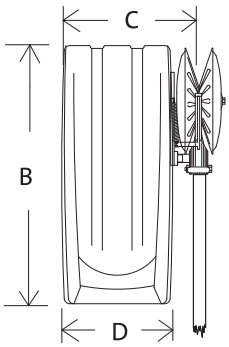
Measurements Motor/gearbox

A: Height above deck
B: Length above deck
C: Max. width incl. gypsy
D: Width above deck
E: Heigth under deck

31/40-windlasses

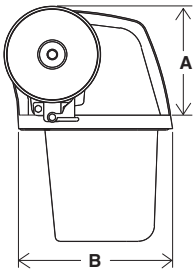
A: 200 mm
B: 370 mm
C: 230 mm
D: 160 mm

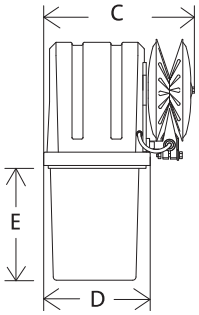




32-windlasses

A: 200 mm
B: 255 mm
C: 230 mm
D: 160 mm
E: 150 mm



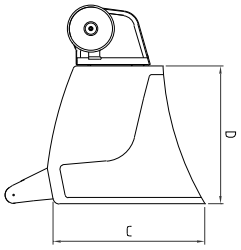


Engbo Rope box

Rope box order no.	A	B	C	D	
39-32000	490	360	700	480	Fibre glass rope box, adaptable to the hull.

Supplied complete with screws and holding brackets.

A= Width at the base
B= Width at the top
C= Length of box
D= Height of box



Engbo leaded ropes

The anchor rope was developed by Engbo in cooperation with Roblon. The aim was to develop a strong and pliable rope that provides good anchoring characteristics, and this resulted in a multiplated polyester rope with a lead core throughout. The lead core is covered by a plastic hose inside the rope.

Part no.	Thickness	Breaking strength	Weight	Length
80-10108	10 mm	1700 daN	4,5 kg	30 m
80-10109	12 mm	2700 daN	7,0 kg	30 m
80-10110	12 mm	2700 daN	11,6 kg	50 m
80-10111	14 mm	3300 daN	16,1 kg	50 m
80-10120	16 mm	4000 daN	21,7 kg	50 m
80-10121	16 mm	4000 daN	32,0 kg	75 m
80-10122	16 mm	4000 daN	43,0 kg	100 m

Engbo Anchors

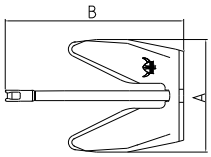
Engbo anchor with swivel
15 kg, highly polished
stainless steel
Order no: 85-20015
Also available in 23 and 30 kg

Plate anchor
12 kg, highly polished
stainless steel
Order no: 85-30012
Also available in 5,8,10 and 20 kg

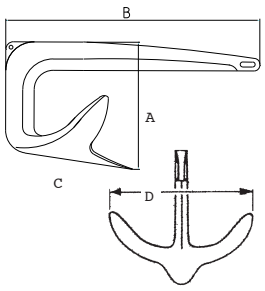
Engbo bruse anchor
10 kg, highly polished
stainless steel or galvanized steel
Order no: 85-81010
Also available in 7.5, 15 and 20 kg

Engbo anchor with swivel
16 kg, galvanized steel

Order no: 85-10016
Also available in 25 kg

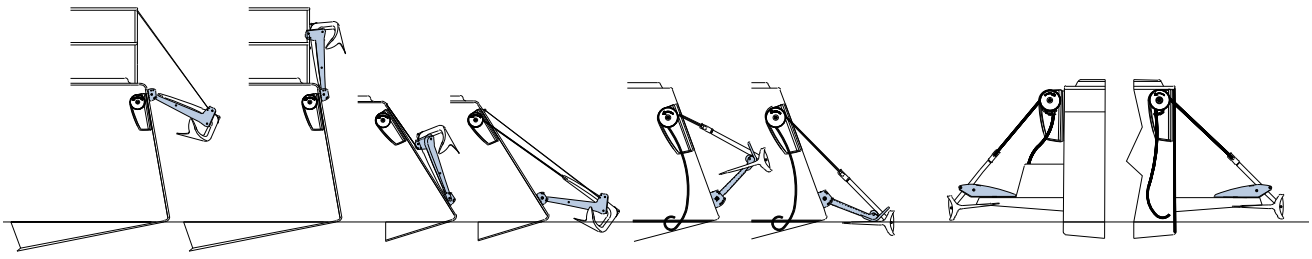


Engbo anchor in galvanized or polished stainless steel					
Weight in kg.	15	16	23	25	30
Dim. mm A	350	350	366	366	410
Dim. mm B	510	510	510	510	715



Engbo Bruse anchor in galvanized or polished stainless steel					
Weight in kg.	5	7,5	10	15	20
Dim. mm A	250	265	295	335	360
Dim. mm B	460	519	570	669	725
Dim. mm C	230	250	260	300	325
Dim. mm D	310	361	385	441	478

Installation examples



Engbo windlass model 40 Anchor davit for bruce anchor Order no: 61-20008	Engbo windlass model 40 Anchor davit for bruce anchor Order no: 61-20008	Engbo windlass model 40 Tilt bracket for Engbo anchor Order no: 61-20009	Engbo windlass model 31 Fixed bracket for Engbo anchor Order no: 65-70001	Engbo windlass model 40 Fixed bracket for Engbo anchor Order no: 65-70002
Anchor davit designed for bruce anchor. The bracket can be lifted up by hand to the push pit when not in use.	The bracket can be tilted down towards the hull in a steady position.	With this bracket the anchor can be lifted out of the water.	These diagrams show Engbo windlass model 31 installed outside at the stern, and model 40 installed on the inside, with a standard fixed bracket and Engbo anchor.	

Maintenance of acid proof products
Should surface corrosion spots occur, can these easily be removed by polishing.

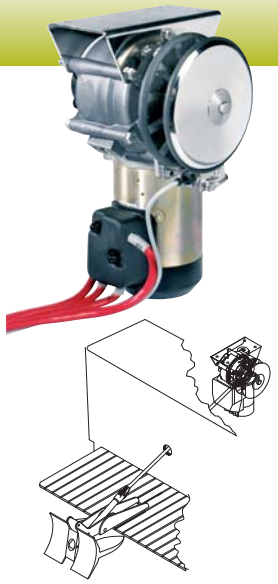
Engbo Maxi 34-series

Development of the 34-series was implemented in response to a considerable need to provide a type of windlass which could be installed almost anywhere in the boat. It will be hard not to find an Engbo windlass to meet your requirements due to the use of various mounting brackets and the fact that the windlasses can be delivered with the gypsy on either the right or the left side. Because the 34-series actually contains a total of 30 different windlasses, it was necessary to develop a numerical matrix which was as simple as possible. (See below.)

The designations are formulated as follows:Winch type 34-3H-12010

34	3	H	12	010
TYPE	POSITION	INSTALLATION	VOLTAGE	POWER
	Gypsy	S=sideways	12 volts	010=1000W
	3=right	V=vertical	24 volts	015=1500W
	4=left	H=hanging below		
Seen from the anchor side		G=longitudinal bulkhead, straight-through shaft		

IMPORTANT! Always remember to view the boat from the anchor side in order to decide whether it is suitable to fit the windlass on the port or starboard side. The gypsy on the left side of the windlass (i.e. a type 4 windlass), or the right side of the windlass (a type 3 windlass).

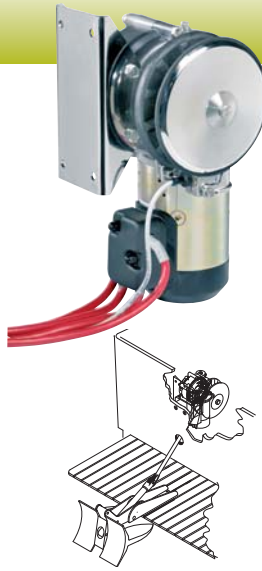


Engbo Maxi 34-H for hanging below deck, inside installation

The gypsy may be installed on either the left or right side of the windlass when seen from the anchor side. Please refer to the order number shown below.

Operation:	Fixed switch panel or wireless remote control. Freefall, automatic stop on the rope version.
Motor:	12/24 V DC, 1000/1500W
Gypsy:	For rope or chain
Rope:	16 mm multiplaited, leaded rope
Chain:	8 mm DIN 766 or 6.5 mm Norwegian standard
Installation:	Hanging under the deck · Inner bulkhead/bench Forward or aft or under any other suitable surface inside the boat

NOTE: Rope/chain guide can be turned infinetely. The windlass can be installed, for example, on a sloping surface, and the motor can be angled forwards/backwards.
Gypsy on the right side of the windlass 34-3H · Gypsy on the left side of windlass 34-4H



Engbo Maxi 34-V for vertical inside installation

The gypsy may be installed on either the left or right side of the windlass when seen from the anchor side. Please refer to the order number shown below.

Operation:	Fixed switch panel or wireless remote control. Freefall, automatic stop on the rope version.
Motor:	12/24 V DC, 1000/1500 W
Gypsy:	For rope or chain
Rope:	16 mm multiplaited, leaded rope
Chain:	8 mm DIN 766 or 6.5 mm Norwegian standard
Installation:	Supplied for inside vertical installation on the stern, or on another vertical surface inside the boat.

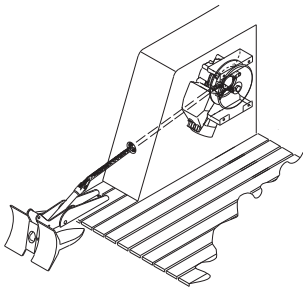
NOTE: Rope/chain guide can be turned infinetely. The windlass can be installed, for example, on a sloping surface, and the motor can be angled forwards/backwards.

Gypsy on the right side of windlass 34-3V, gypsy on the left side of windlass 34-4V

Engbo Maxi 34-S for sideways inside installation

The gypsy may be installed on either the left or right side of the windlass when seen from the anchor side. Please refer to the order number shown below.

Operation:	Fixed switch panel or wireless remote control. Freefall, automatic stop on the rope version.
Motor:	12/24 V DC, 1000/1500 W
Gypsy:	For rope or chain
Rope:	16 mm multiplaited, leaded rope
Chain:	8 mm DIN 766 or 6.5 mm Norwegian standard
Installation:	Supplied for vertical installation · On the longitudinal inside bulkhead or on any other suitable surface inside the boat.



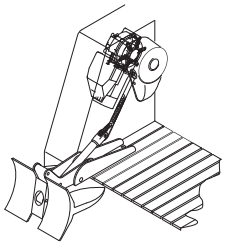
NOTE: Rope/chain guide can be turned infinetely. The windlass can be installed, for example, on a sloping surface, and the motor can be angled forwards/backwards.

Gypsy on the right side of windlass 34-3S, gypsy on the left side of windlass 34-4S

Engbo Maxi 34-G for longitudinal inside installation

The windlass is equipped with a straight-through shaft for installation on the outside bulkhead on an integrated swimming platform, on either the port or starboard side. Please refer to the order number shown below

Operation:	Fixed switch panel or wireless remote control. Freefall, automatic stop on the rope version.
Motor:	12/24 V DC, 1000/1500 W
Gypsy:	For rope
Rope:	16 mm multiplaited, leaded rope only
Installation:	Supplied for longitudinal bulkhead installation, i.e. on the integrated swimming platform. On another vertical surface or on any other suitable surface inside the boat.
Cover measurements:	H: 90mm, L: 370mm,W: 170mm



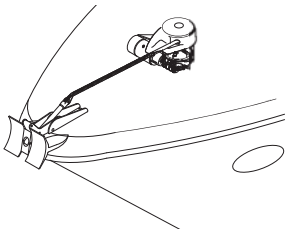
NOTE: The white cover must be installed vertically. The gear/motor can be positioned in 6 different angles.

Gypsy on the right side of windlass 34-3G · Gypsy on the left side of windlass 34-4G

Engbo Maxi 34-D for deck installation

The windlass is equipped with a straight-through shaft for installation on either the forward or aft deck.

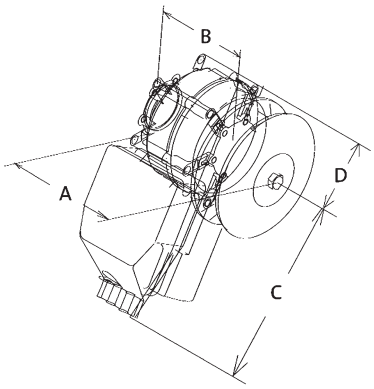
Operation:	Fixed switch panel or remote control. Freefall, 2 end-stops.
Motor:	12/24 V DC, 1000/1500 W
Gypsy:	For rope
Rope:	16 mm multiplaited, leaded rope
Installation:	Supplied for exterior deck installation as standard · Forward or aft On the horizontal interior bulkhead, or on any other suitable surface inside the boat
Cover measurements:	H: 85mm, L: 250mm,W: 170mm



NOTE: The motor/gear can be positioned in 6 different angles.

Seen from the anchor side: Rope inlet on the left side of the cover: 34-3D
Rope inlet on the right side of the cover: 34-4D.

Technical data Maxi 34-series



Motor:	12/24 V DC, 1000/1500W
Weight:	Approx. 20 kg
Pulling power:	1000 W approx. 500 KP rope approx. 650 KP chain 1500 W approx. 850 KP rope approx. 1000 KP chain
Pulling speed:	rope 20-25 m/min chain 15-20 m/min
Operating time:	Max. 3 min. continuously
Recommended fuse 12V :	200 A/1000W, 300A/1500W
Recommended fuse 24V :	200 A/1500W
Recommended battery capacity 12V :	min. 100 Ah
Recommended battery capacity 24V :	min. 60 Ah

Measurements:

A: Total width	220 mm
B: Width gear house	150 mm
C: Total length	350 mm
D: Total height	210 mm

Maximum deck thickness 34 D: 35 mm

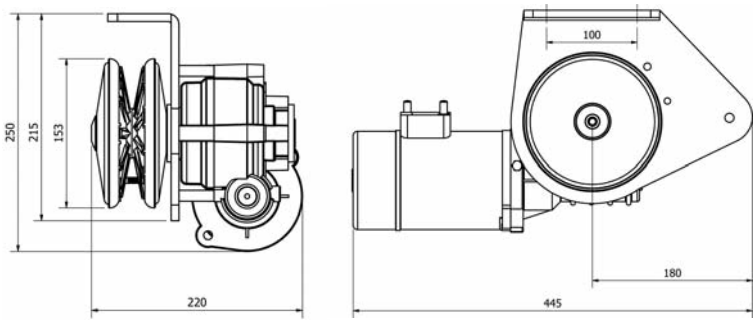
Engbo Maxi 38-M for hanging below deck/swimming platform, inside installation

The gypsy may be installed on either left or right side of the windlass.

Operation:	Fixed switch panel or wireless remote control. Freefall, automatic stop.
Motor:	12/24V DC, 1000/1500W
Gypsy:	For rope
Rope:	16 mm multiplaited, leaded rope
Installation:	Hanging under deck/swimming platform or other suitable horizontal surfaces inside the boat.

The rope is guided up and out through the goose neck (68-00004).
Gypsy on the right side of windlass 38-3M, gypsy on the left side of windlass 38-4M.

Measurements for Maxi 38-M

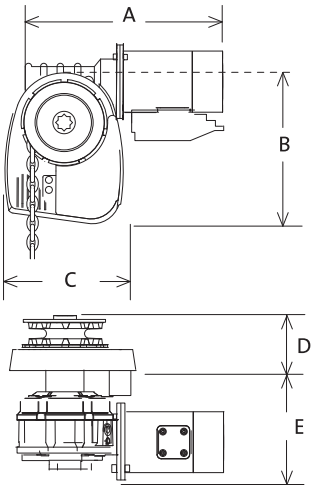


Engbo Maxi 33-C for outside or inside installation

Nice designed windlass with durable housing and chain gypsy.
All parts in stainless, highly polished steel.

Operation:	Fixed switch panel or wireless remote control. Non-freefall, electrically run in both directions, but may be released manually by using the enclosed handle
Cover measurements:	H: 85 mm, L: 220 mm,W: 115 mm
Gypsy:	For chain
Chain:	8 mm DIN 766 or 6.5 mm Norwegian standard
Installation:	Designed for installation on the forward/aft deck, or on other vertical surfaces

Technical data Maxi 33-series



Motor:	12/24 V DC, 1000/1500W
Weight:	Approx. 20 kg.
Pulling power:	1000 W approx. 650 KP
	1500W approx. 1000 KP
Pulling speed:	10–15 m/min
Operating time:	Max. 3 min. continuously
Recommended fuse 12V :	200 A/1000W, 300A/1500W
Recommended fuse 24V :	200 A/1500W
Recommended battery capacity 12V :	min. 100 Ah
Recommended battery capacity 24V :	min. 60 Ah

Measurements

A: Total length under deck	350 mm
B: Total length over deck (cover)	220 mm
C: Total width over deck (cover)	160 mm
D: Height over deck	90 mm
E: Height under deck	160 mm

Maximum deck thickness 50 mm

Hinged anchor bracket · 61-30001

Hinged anchor bracket · 61-30002

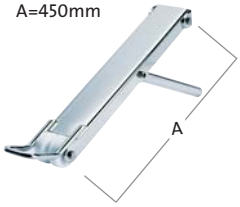
Hinged anchor bracket · 61-30003

Anchor davit · 61-30005
Stay · 61-30008

Tilt bracket · 61-30006

Tilt bracket · 61-30007

Anchor bracket tube profile
61-20014



Anchor bracket C-profile
61-20015

Fixed bracket · 65-50001

Fixed bracket · 65-50002

Small roller 45° · 60-65000

Small roller 90° · 60-50000

Fixed bracket · 65-70001

Fixed bracket · 65-70002

Rope box bracket · 65-00002

Hinged bowsprit bracket 61-30004

Rope bushing with rollers
68-00008

Rope guide with nut
39-73000

Rotating goose neck · 68-00004

Cover for chain hole with rollers
stainless steel · 39-72000

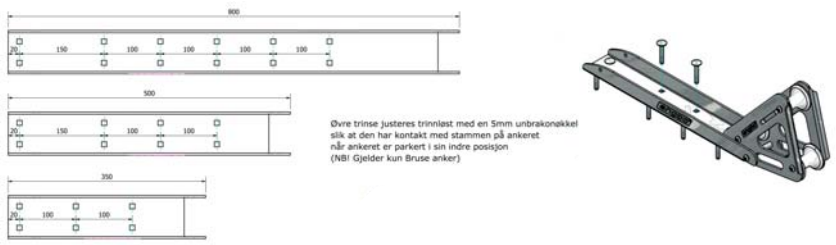
Swivel, acid-proof steel,
highly polished · 85-00000

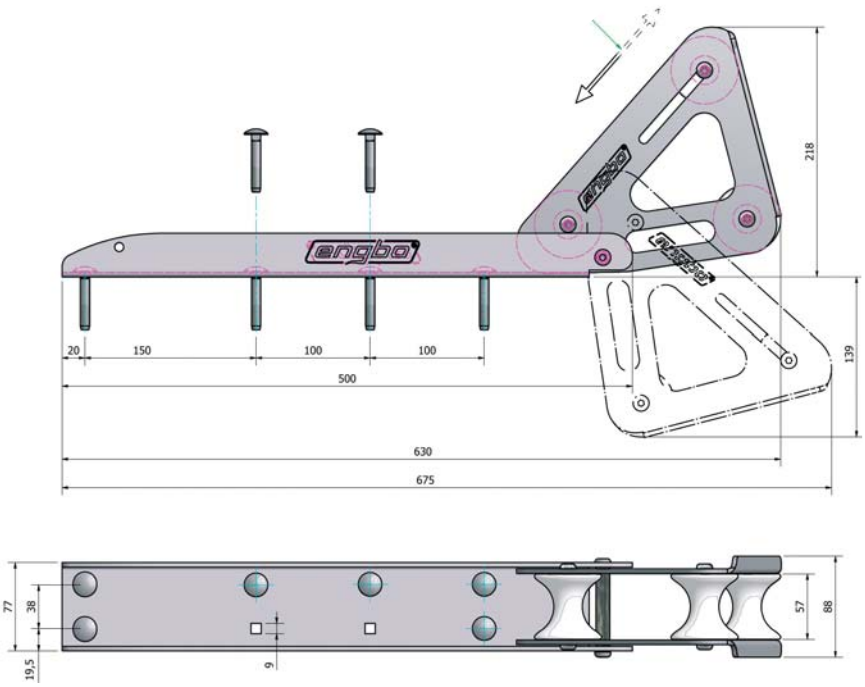
Remote control holder 12.47015

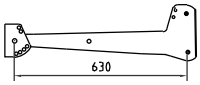
Kabelar sett 55-00104

Roller for new Engbo
bracket 14-00277

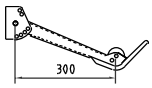
Completely assembled


Øvre trinse justeres trinnløst med en 5mm unbrakonøkkel
slik at den har kontakt med stammen på ankeret
når ankeret er parkert i sin indre posisjon
(NB! Gjelder kun Bruse anker)



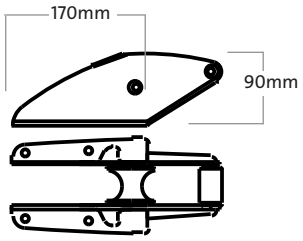


61-30005 ANCHOR DAVIT

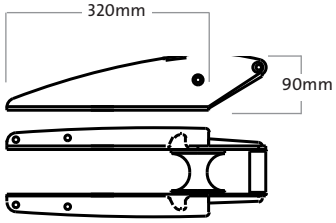


61-30006 TILT BRACKET SHORT
61-30007 TILT BRACKET LONG

Fixed brackets



65-50001 SHORT,NARROW - 120 mm
65-50002 SHORT,WIDE - 140 mm



65-70001 LONG, NARROW - 120 mm
65-70002 LONG,WIDE - 140 mm

Engbo Mooring System

Whether your boat is large or small, ropes are usually stowed away when you are at sea. So, you have to unship the ropes before you proceed to moor the boat by hand. This can be a very demanding task, both in calm and rough weather. Engbo Electronic Mooring System represents a whole new approach to this part of a boater's life.

How it works

The ropes are concealed under deck, with only a small ball appearing in the nozzle of a small gooseneck or a cleat on deck. When you prepare to moor, all you have to do is pull out the rope you need and secure the end ashore. Then the electrically-powered winch under deck pulls the boat in place. The wireless remote control lets you do this single-handed. You may fit from one to six mooring winches on your boat, all operated by the same remote control.

The system consists of a hollow cleat on deck, a winch under deck and a special rope. You pull out the rope through the cleat in the length that you need, and the winch pulls it back in to secure the boat, and all the way when you leave port. The cleat and the winch are fixed by the same bolts through the deck.

The winch operates at two speeds. Full speed is approximately 25 m per minute, while slow speed helps you to moor precisely. The winch has automatic stop. When you need to pull out the rope, the winch allows freewheeling.

The wireless remote control lets you operate from one to six winches simultaneously. Simply pushing a button lets you pull out rope, or pull in and tighten the rope. This remote is shaped like a boat. The buttons are positioned like the winches on your boat for intuitive operation. In addition, the remote control may be programmed to operate bow and stern thrusters.

The winch automatically locks the rope in the position you choose. For additional security, you may also lock the rope using two catches on the cleat. The catches return to free position when the winch starts pulling in the rope.

A special rope has been developed for the mooring system. The rope ends in a small ball into the free end, while the other end is formed to facilitate mounting the system. This standard rope has a breaking strength of 5,700 kilos. Stronger ropes are also available, if required.

The powerful winches have a pulling power of several hundred kP. Considering that a normal person can pull 50 to 60 kilos for short intervals, the advantages of the mooring system are evident.

The mooring system is designed for boats from 30 to 100 feet. Future versions will include systems for smaller and larger vessels.

Wireless remote control for Engbo mooring system

By using the wireless remote control, it is possible to operate up to six separate Engbo winches at the same time, at high or low speed, or in the release position. The remote control has been designed in the shape of a boat. The switches are positioned so that it is easy to see the winch connection. If necessary, the remote control can also be programmed to run bow thrusters or stern propellers.

Instrument panel with the wireless remote control located on the port side of the steering wheel.

Part no. 12-47012

MIDI 201 as mooring windlass (see p. 5)

Technical data – Engbo mooring winch – Maxi 38M

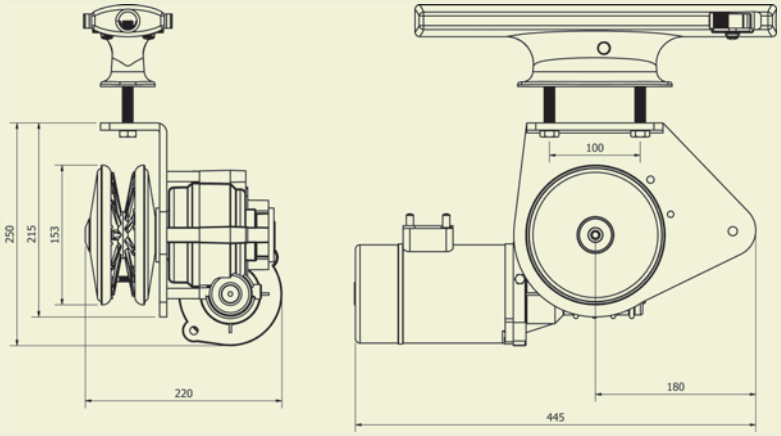
Motor:	12V/800W· order no. 38-M 12008 12V/1000W· order no. 38-M-12010 12V/1500W· order no. 38-M-12015 24V/1500W· order no. 38-M-24015
Gypsy:	For rope 16–18 mm
Weight:	Approx. 20 kg.
Installation:	Installed below deck in connection with hollow cleat, rotating gooseneck or mooring pipe.
Standard equipment:	Winch incl. attachment bracket, main switch, nuts and bolts.
Additional equipment:	Wireless remote control, transmitter and receiver unit (programmed for 6 winches), cleats (several alternatives), mooring pipes, power cables, fuses and fuse holders.
Pulling power:	Approx 500 kg with 1000W motor
Pulling speed:	Two speeds. High speed, approx. 25m/min
Operating time:	Max. 3 min. continously
Recommended battery capacity 12V:	min. 100 Ah
Recommended battery capacity 24V:	min. 60 Ah

Specifications

- Two speed winch: - Full speed approx. 25 m / min. + slow speed. Use your remote control, and press the «in drive» button all the way in for the winch to pull at full speed. When you press the button half-way in, the winch pulls at pulsing slow speed.
- The winch has two electronic stop functions. This is helpful when you are leaving harbour and need to stow the rope onboard. Press the «in drive» button all the way in, until the winch stops the first time. The rest of the rope may only be pulled in by slow speed, and the winch stops automatically when the end of the rope reaches the cleat.
- When you need to pull out the rope, the winch allows freewheeling when you press the «free» button on the remote control.
- The winches are available with a range of motors of 12 or 24 V.
- Pulling power is approximately 500 kg with 1000 W motor.
- The Engbo Electronic Mooring System is patented.

We reserve the right to change technical specifications.

Dimensions



Engbo Mooring rope

Order no.	80-10130
Width	Breaking strength 5700 KP
Total length	20 m
Diameter fixing bolts	Diameter: 16 mm

Engbo Mooring ropes have been specially designed for use in combination with Engbo's mooring winches. A fendered ball at the end of the rope prevents it from being pulled down below deck.

Engbo Mooring equipment

Model	Cleat L	Cleat R	Cleat K	Cleat F	Cleat S
Order no.	68-00001	68-00006	68-00002	68-00005	68-00003
Hight above deck	90mm	60mm	60mm	60mm	60mm
Width	80mm	50mm	50mm	50mm	50mm
Total length	400mm	280mm	280mm	280mm	280mm
Distance centre fixing bolts	100mm	100mm	100mm	100mm	100mm
Diameter fixing bolts	M14	M12	M12	M12	M12

The cleats comes in various models, where the rope is guided through the cleat, through the mooring winch, for storage inside the boat.

Engbo Thruster Systems

All models:

- Relay is mounted on the engine (with the exception of XF20)
- Battery cables mounted on the relay / motor terminal
- Relay box is replaced by a separate circuit board with integrated receiver for wireless remote control (with the exception of XF20)
- All thrusters are prepared for wireless Remote control (option for XF20)

VR, HR and SR models:

- Gearhouses are oil-filled

Belt drive models (R)	Vertikal models (VR)	Stern models (SR)
XF20	XF30VR	XF60SR
XF40R	XF60VR	XF90SR
XF60R	XF90VR	XF130SR
XF75R	XF130VR	
XF90R		
XF120HR		

Comes with the following accessories:

- Thruster unit with relay mounted on the motor (Not XF20 - see info)
- Separate circuit boards with integrated receiver wireless remote
- The cable between the thruster device and circuit boards
- Mounting kit / bolts
- Drill template
- Manual / installation guide

Engbo AS has for several years delivered bow and stern thrusters. Engbo will distribute the thrusters together with anchor systems as a complete package for maneuvering and anchoring.

The control units for winches and thrusters are based on the very same technology. This fact is making it possible to maneuver and to moore with one, single control unit.

Engbo Innovation AS has developed the Engbo thruster systems. This work is based on research and development test results, extensive laboratory findings and sea trials. Both mechanically and electronically, the Engbo thruster propellers represent (in various ways) a new generation propelling power. A high level of performance combined with reduced tunnel diameter justifies the positioning of the thrusters, which is deeper and farther to the front of a given vessel. This, in turn, provides increased effect expressed as an improved turning moment with relation to the hull.

One of the goals set for this project was to develop a thruster system where the various models should be based on the very same technology. A second goal was to ensure the installation should be time efficient as well as easy. As the third criteria, the maintenance of each vessel should be minimal. All along, it was a prerequisite that the Engbo thruster system could be integrated with the new, electronic control unit for Engbo

anchor system. Naturally, a new, wireless remote control for winches and thrusters had to be developed as well. We feel it has all been achieved!

Engbo Thruster series

The Engbo thruster system has direct operation through a solid transmission belt between the motor and the propeller shaft. There is no oil in the gear housing. The engine is placed in parallel with the tunnel. This design reduces noise, is compact and provides excellent conditions for the build-in. This equipment is highly desirable in vessels where space is an issue. The gear housing and the tunnel bracket is one unit and made from stainless steel AISI 316 for the larger models. The Engbo 20 bracket is made from glass fiber armored composites. This way, there will be no future expenses for galvanic anodes.

The Engbo is delivered installed onto the tunnel bracket; as one unit. The installation is thus easy. Research has indicated savings of up to 50 per cent in time compared to conventional thrusters.

Engbo Wireless remote controll

12-47014

Wireless remote control with integrated thruster / anchor winch operation. Part no. 12-47014
With the wireless remote control you will be able to keep your vessel clear of land whilst simultaneously securing your mooring or using the anchor winch.
Range: Up to 30 m.
This wireless remote control will keep afloat. It comes with a wrist strap and has anti sliding protection.

Engbo Touch panel

12-79001

This touch panel has the same design as the Engbo touch panel for anchor winch. Part no. 12-79001
If mounted correctly, the Engbo touch panel is waterproof (IP 68) and flexible. It may be fitted to surfaces that are slightly rounded. The backside is self adhesive, but can also be fastened by using screws. It comes with a 10 m cable.

Measurements: Width 58 mm. Height 49 mm.

Engbo Joystick panel

12-79002 12-79003

If you wish a control device shaped like a joystick – here it is. Part no. 12-79002
Waterproof, UV proof rubber protection. Part no. 12-79003
On - off switch, running indication light

Measurments:

12-79002	B: 62mm	H: 62mm
12-79003	B: 62mm	H: 90mm

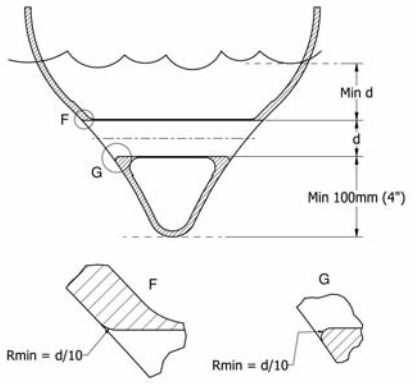
Engbo Tunnels

Manufactured in GRP, protected by a fiberglass
mat providing a smooth, installation friendly outer surface.

Delivered with an inner diameter of 110 mm, 160 mm, 185 mm or 250 mm.

No notable speed reduction

A tunnel installation, which has been carried out properly, will not produce any notable reduction in speed. It maintains a low noise level and provides optimal effect. It will also serve a function to reinforce the bow and hull. The very best performance is achieved when the passage between hull and tunnel is rounded off with a radius corresponding to 10 per cent of the tunnel diameter.



Engbo tunnel extender

Engbo tunnel extender is used for stern thrusters when mounted near the water surface, and is desirable to avoid the propeller draws in air. Will also increase the effect by controlling water flow away from, for example drove or trim tabs.
(Ø = 185mm / D = 250mm Order No: 100-00003

Engbo Tool set

Tool set – the safe & easy way to install

This tool kit makes the installation safer and easier both for the professional and for the do-it-yourself enthusiast. The kit consists of a rod fitter and an electric cutter with a special cage. Spacers have been made for each tunnel diameter. Contact us for more information.

Part no. 118-50015

Spesifications

Thruster						
Model	XF 20	XF 40R	XF 60R	XF 75R	XF 90R	XF 120HR
Motor effect (kW) at 12V/24V*	12V / 1,6kW	12V / 2,0kW	12V / 5,0kW 24V / 5,0kW	12V / 6,0kW 24V / 6,0kW	12V / 6,5kW 24V / 6,5kW	24V / 7,0kW
Weight (kilos)	5	13	15	17	17	31
Tunnel diameter(mm)	110	160	160	185	185	250
Propeller Single/Double	Single	Single	Single	Single	Single	Double contra rotating
Power transmission	Transmission belt	Transmission belt	Transmission belt	Transmission belt	Transmission belt	Transmission belt
Thrust (KG)*	20	40	60	75	90	120
Recommended boat size max**	22/6	30/10	39/11,5	45/15	50/16,5	75/22,5

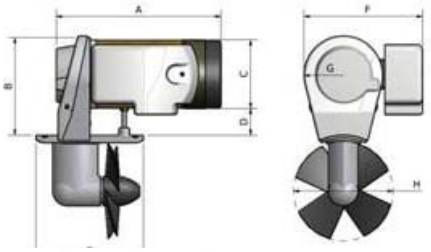
Installation measurements (bow)

Thruster	A	B	C	D	E	F	G	H	I
XF 20	197	158	106	29±5	180	135	67.5	110	
XF 40R	270	150	120	15±8	192	198	65.5	160	230
XF 60R	310	150	130	15±8	192	210	65.5	160	
XF 75R	310	190	130	50±8	200	210	75	185	
XF 90R	310	190	130	50±8	200	210	75	185	
XF 120HR	340	192	250	95	75	392			

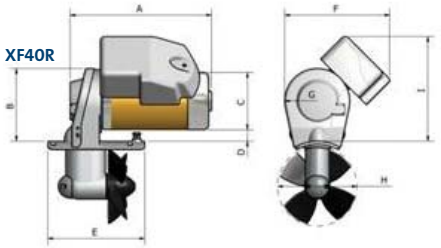
Thruster	A	B	Bmin	C	D	E	F
XF 30VR	252	132	132	118	60	210	140
XF 60VR	295	185	185	145	60	210	150
XF 90VR	370	185	185	230*	80	270	190
XF 130VR	385	250	250	320*	100	270	190

* 2 propeller

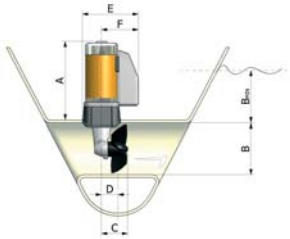
XF20/XF60R/XF75R/XF90R



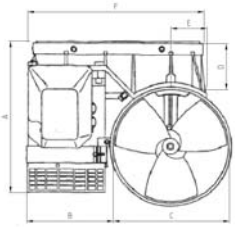
XF40R



XF30 VR/XF60 VR/XF90 VR/XF130 VR



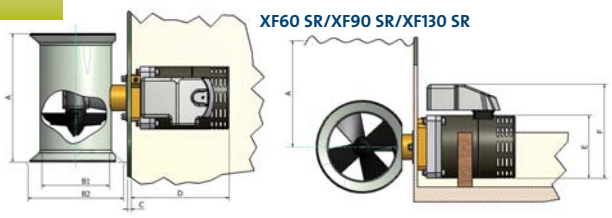
XF120 HR



Installation measurements (stern)

Thruster	A	B1	B2	C	D	E	F	G
XF 60SR	300	185	250	MAX.45	270	130	170	278
XF 90SR	300	185	250	MAX.45	320	172	225	278
XF 130SR	400	250	310	MAX.82	320	172	225	375

XF60 SR/XF90 SR/XF130 SR



Spesifications

Thruster				
Model	XF 30VR	XF 60VR	XF 90VR	XF 130VR
Motor effect (kW) at 12V/24V*	12V / 2,0kW	12V / 4,0kW 24V / 4,0kW	12V / 5,0kW 24V / 5,0kW	24V / 7,0kW
Weight (kilos)	16	19	28	32
Tunnel diameter(mm)	132	185	185	250
Propeller Single/Double	Single	Single	Double contra rotating	Double contra rotating
Power transmission	Angle Gear	Angle Gear	Angle Gear	Angle Gear
Thrust (KG)*	30	60	90	130
Recommended boat size max**	26/8	39/11,5	50/16,5	75/22,5

Thruster			
Model	XF 60SR	XF 90SR	XF 130SR
Motor effect (kW) at 12V/24V*	12V / 4,0kW 24V / 4,0kW	12V / 5,0kW 24V / 5,0kW	24V / 7,0kW
Vekt (kg)	22	32	37
Tunnel diam. (mm)	185 spesial	185 spesial	250 spesial
Propeller Single/Double	Single	Double contra rotating	Double contra rotating
Power transmission	Mechanical gear drive	Mechanical gear drive	Mechanical gear drive
Thrust (KG)*	60	90	130
Recommended boat size max**	39/11,5	50/16,5	75/22,5

*) The model description refers to the thrust stated at operational voltage of 10,5V/21V when the thruster is in use. Higher voltage will increase the thrust. A system of 24V will typically run with less voltage fall and yield with stronger thrust.

**) Recommended maximum boat size in ft/m. The size will depend upon factors such as weight, hull and air exposure of a given boat design.

Mounting equipment

Best. No	Cables and electrical
12-00050	Main switch small
12-00087	Main switch large
12-00065	Key to the main power switch
12-90100	Fuse 100 amp
12-90150	Fuse 150 amp
12-00200	Fuse 200 amp
12-00300	Fuse 300 amp
12-00350	Fuse 350 amp
12-00400	Fuse 400 amp
12-00145	Fuse holder with cover

12-00200

12-00145

Best. No.	Tunnels
450-10075	Tunnel 110 mm 0.75 m XF 20
400-10075	Tunnel 132 mm 0.75 m XF 30VR BP 300 / 450
400-10100	Tunnel 132 mm 1.0 m 30VRBP XF 300 / 450
400-10150	Tunnel 132 mm 1.50 m XF 30VR BP 300 / 450
400-10250	Tunnel 132 mm 2.5 m XF 30VR BP 300 / 450
500-10100	Tunnel 160 mm 1 m XF 40R/60R
500-10150	Tunnel 160 mm 1.5 m XF 40R/60R
500-10250	Tunnel 160 mm 2.5 m XF 40R/60R
100-10100	Tunnel 185 mm 1 m XF 75R/90R/60VR/90VR
100-10150	Tunnel 185 mm 1.5 m XF 75R/90R/60VR/90VR
100-10250	Tunnel 185 mm 2.5 m XF 75R/90R/60VR/90VR
200-10250	Tunnel 250 mm 2.5 m XF 120HR/130VR

Best. No	Spare Parts for thrusters
55-00081	Zinc kit XF60SR/XF60VR/XF60V BP/SP600
55-00082	Zinc kit XF90SR/130SR/120HR/130VR BP/SP800/900/1200/1300
55-00079	Oil kit XF 250 ml
55-00057	Propeller kit XF20
55-00058	Propeller kit XF30VR/XF30V + BP300/450 RH
55-00059	Propeller kit BP450 LH
55-00060	Propeller kit XF60SR/XFS60/XF60VR BP600/800/900/1000H + + SP600/900 RH
55-00061	Propeller kit XF90VR BP800/900/1000H + + SP900 LH
55-00062	Propeller kit XF40/60 XF40R/60R RH
55-00063	Propeller kit XF75/90 XF75R/90R RH
55-00064	Propeller kit XFS130/XF130VR BP1200/1300/1500H + + SP1300 RH
55-00065	Propeller kit XFS130 BP1200/1300 + + SP1300 LH

55-00081

55-00082

55-00079

55-00062

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